REMARKS

In the Office Action, the Examiner rejected claims 1-38 pursuant to 35 U.S.C. § 101 as directed to non-statutory subject matter. Claims 1-24 were rejected pursuant to 35 U.S.C. § 103(a) as unpatentable over Evans (U.S. Patent No. 6,347,329) in view of Harvin et al. (Managed Care: New Financial Practice/Strategies . . .). Claims 25-42 were rejected pursuant to 35 U.S.C. § 103(a) as being unpatentable over Evans in view of Harvin et al. and further in view of iMedica (iMedica Creates the Most Comprehensive Charting Solution). Applicants respectfully request reconsideration of the rejection of claims 1-42, including independent claims 1, 25 and 39.

Claims 1-38 are directed to statutory subject matter. Claim 1 claims obtaining the medical record and extracting billing information from the medical record based on analysis with a device. The method is not a mere abstract idea, but requires automatic performance by a device. Extracting billing information is concrete, useful and tangible. Billing information is very important to medical facilities, so automatically extracting billing information as a function of analysis with a device may be very useful for hospitals or others. Similarly, claim 25 claims an engine of a device for automatically extracting billing information, providing concrete, useful and tangible results, not an abstract idea.

Independent claim 1 claims obtaining a medical record comprising structured and unstructured data, analyzing at least the unstructured data with a device and automatically extracting billing information as a function of the analysis. Evans and Harvin et al. do not disclose these limitations.

Evans provides a "point-of-care" system for entering patient data immediately at the point-of-care (col. 2, lines 33-37). The medical record of a patient is gathered in a wide variety of data formats, including legacy data (col. 2, lines 43-49), patient identifiers (col. 3, lines 9-13), x-ray images (col. 5, lines 6-8), laboratory test results (col. 5, lines 6-8), medications (col. 5, lines 6-8), and text (col. 9, lines 5-12). Some data may be converted to supported formats (col. 10, lines 28-31). Based on access to this information, the physician can enter results, evaluate medical history, annotate images and prescribe medications or treatments (col. 5, lines 18-26). Different modules communicate to assist

in identifying further needs during physician review (col. 6, lines 19-41; col. 7, lines 62-66). Practice guidelines are also included to assist the physician (col. 7, lines 62-66). Other than these data collection functions, the system can create graphs, identify medication interactions, allow user selection, allow user sorting and allow user analysis (col. 15, lines 11-18). For example, the diagnosis module communicates with a procedure module to obtain information on proper administration of procedures indicated by diagnosis (col. 11, lines 15-35). Evans collects data and perform simple searching for use by the physician at the point of care. Some data is converted from one structure to another, so the simple searching may be based on a known data structure. There is no disclosure of analysis by a device of unstructured data, such as free text or images. The free text and images are merely provided for physician review and annotation. Searching is provided by gathering data in a known structure, but Evans does not suggest analysis by a machine of unstructured data.

Harvin et al. disclose a computer database with billing information (page 4, paragraph 3). The medical record is used to provide customized lists of common complaints, to provide automatic alerts, to provide reminders, for checking drug interactions and to provide access to data (page 4, paragraph 3). The data is collected into a known structure at the point-of-care (page 4, paragraph 4). Such structure allows searches (page 4, paragraph 7). Harvin et al., like Evans, uses a structured medical record for searching. There is no suggestion for analyzing by a device unstructured data and extracting billing information as a function of the analysis.

The prior art mentions using billing codes, and using domain knowledge. However, extracting billing codes in Evans or Harvin does not involve analyzing unstructured data with the aid of a device, such as a computer, to automatically extract the billing information, such as codes. Evans and Harvin et al. only disclose collecting code data prospectively or in a structured format for analysis. Furthermore, both Evans and Harvin et al. refer to the use of domain knowledge in order to improve clinical workflow prospectively, such as using knowledge about guidelines to provide alerts to care providers about what treatment to give the patient next. However, they do not disclose using domain knowledge to extract retrospectively information from already existing unstructured patient records.

Independent claim 25 claims an engine of a device that analyzes structured and unstructured data as a function of domain specific criteria and extracts billing information as a function of the analysis.

As discussed above for claim 1, Evans and Harvin et al. disclose point-of-care data collection, but not suggest analysis by a device of unstructured data.

iMedica also gathers data at the point-of-care (page 2, paragraph 11). Documentation is provided electronically, and a physician is guided through medical choices and diagnosis codes (page 2, paragraph 5). The physician chooses information from the knowledge base to make charting easier (page 2, paragraph 5). Billing codes may be created based on these choices (page 3, paragraph 13), and drug interactions may be automatically checked (page 2, paragraph 1). However, the program is not a diagnostic tool (page 2, paragraph 5). iMedica merely assists the physician in electronic chart making. iMedica does not suggest analysis by a device. iMedica collects data in a specific record, so also does not suggest analysis by a device of unstructured data. None of the three references suggest this limitation of claim 25.

Independent claim 39 claims instructions for a program implemented on a machine for analyzing unstructured data. As discussed above for claims 1 and 25, Evans, Harvin et al. and iMedica do not suggest this limitation.

Dependent claims 2-24, 26-38 and 40-42 depend from the independent claims discussed above, so are allowable for the same reasons. Further limitations of the dependent claims distinguish from the cited references. In particular, the examples below deal with the citation relied on by the Examiner.

Claims 5 and 42 claim extracting all codes supported by patient information based on all domain-specific criteria. Harvin et al. merely link to billing information (page 4, paragraph 3). There is no disclosure of extracting all codes supported by the patient record and no disclosure of extracting as a function of all domain-specific criteria. iMedica provides automatic coding (page 2, paragraphs 2 and 3), but does so based only on the

final physician diagnosis (page 2, paragraph 5). iMedica does not disclose extracting all codes supported by the information.

Claims 6 and 7 claim institution-specific domain knowledge. The cited paragraph of Harvin et al. (page 2, paragraph 1) notes the existence of an institution, but in the context of having financial liability. There is no disclosure of institution-specific domain knowledge used for analysis by a device. Similarly, required reporting of page 2, paragraph 7 does not provide for hospital based domain knowledge used for analysis by a device.

Claims 8 and 9 claim condition or disease specific knowledge used for analysis of patient data by a device. Col. 7, lines 1-9 cited by the Examiner relate to mere data entry by a physician, not knowledge used for searching the patient record. Col. 14, lines 45-67 relate to creating an audit trail of data entry, not condition or disease specific knowledge for analyzing the patient record by a device.

Claims 10, 11, 24, 28 and 29 claim an explanation with a pointer to information supporting the extracted billing information. The pointers of Evans at col. 8, lines 34-65 are mere references to other data sources making up the patient record, so are not pointers to information supporting extracted data. Similarly, Harvin et al., on page 4, paragraphs 3 and 4 link to billing information, but do not disclose pointing to supporting information providing the basis for the billing codes.

Claims 12, 13, 14, 30 and 31 claim automatically generating a medical claim for the patient using the extracted billing information. Other than not extracting the billing information as claimed, Harvin et al. link to billing information and automate some other aspects (page 4, paragraphs 3 and 7). However, Harvin et al. do not disclose automatically generate a medical claim for a patient.

Claims 15, 16, 17, 32, 33 and 34 claim automatic updating using the extracted billing information. Harvin et al. collect the information at the point-of-care (page 4, paragraph 4). Billing forms are simultaneously generated with an original transaction (page 3, paragraph 3), but there is no suggestion to automatically update the record with extracted billing information.

Claims 18, 19, 20, 35 and 36 claim automatic assessment of the quality of information of the medical record using the extracted billing information. Harvin et al. assume the medical record data is accurate (page 5, paragraphs 4 and 6).

Claims 21, 22, 23 and 37 claim automatically determining an expected amount of reimbursement. Harvin et al. note case tracking (page 2, paragraph 7) and the importance of identifying profitability (page 4, paragraph 1). Harvin et al. relies on data entry to assist these goals, not on any determination of an expected amount of reimbursement.

CONCLUSION

Applicants respectfully submit that all of the pending claims are in condition for allowance and seeks early allowance thereof. If for any reason, the Examiner is unable to allow the application but believes that an interview would be helpful to resolve any issues, he is respectfully requested to call the undersigned at (650) 943-7350 or Craig Summerfield at (312) 321-4726.

Respectfully submitted,

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